Quality Management in Open Source Projects
Experiences from the Open eCard Project

Daniel Nemmert, Hans-Martin Haase, Detlef Hühnlein, Tobias Wich
Agenda

- The Open eCard App
- Open Source Projects
  - Success Factors
  - Problems
  - Solution
- ISO 9001:2008
- The Open eCard QMS
  - Project Management & Community Interaction
  - Development
  - Product Quality
  - Community Feedback
  - Marketing
- Conclusion
The Open eCard App

- Platform independent
- Highly extensible
- ISO/IEC 24727 conformity
- Supports all popular browsers
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The general goal is simple:

Have a large *and* active community

(and a good documentation of your code)
Open Source Projects: Success Factors

- large number of contributions
- Find bugs
- good documentation
- Modularity
- Small core team
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Open Source Projects: Problems

- Low number of contributors
  - Most work has to be done by the core team
  - That includes:
    - Planning
    - Development
    - Documentation
    - Testing

- How to assure a high level of quality without a “swarm” of bug reporters?
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Solution:

- Use tools for e.g.:
  - Continuous Integration
  - Acceptance testing

- Use your small core team to your advantage
  - Define precise requirements
  - Have a well-defined development process
  - Use strict code-style guidelines

- Tailor ISO 9001:2008 to your own needs in a Quality Management System
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- ISO 9001:2008

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- Conclusion
Continual improvement of a Quality Management System according to ISO 9001:2008

- Customers
- Satisfaction
- Resource management
- Measurement, analysis and improvement
- Product Realization
- Management Responsibility
- Requirements
- Input
- Output
- Product

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- Management responsibility
  - Management commitment
  - Customer focus
  - Quality policy
  - Planning
  - Responsibility, authority and communication
  - Management review

Continual improvement of a Quality Management System according to ISO 9001:2008
Resource management
- Provision of resources
- Human resources
- Infrastructure
- Work environment
Product realization
- Planning of product realization
- Customer-related processes
- Design and Development

Continual improvement of a Quality Management System according to ISO 9001:2008

- Management Responsibility
- Resource management
- Measurement, analysis and improvement
- Product Realization
- Customers
- Satisfaction

Input
Requirements

Product
Output
Measurement, analysis and improvement
- Monitoring and measurement
- Control of nonconforming product
- Analysis of data
- Improvement
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The Open eCard QMS

Quality Management System of the Open eCard project

Community

Recruitment of Contributors

Requirements

Input

Project management & Community Interaction

Development

Product Quality Management System

Community Feedback & Marketing

User Community

Satisfaction

Developer Community

Beta-Testing
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- evaluate:
  - Community Feedback
  - Internal Feedback
- define new requirements
- assign tickets to contributors
- plan new features new requirements
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 Contributors develop new features
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Product Quality

- Continuous Integration
  - Mocking
  - Jenkins
- Acceptance Testing
  - eID-Client-Test-Suite
  - various services
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Community Feedback

- Bug Reports
- Feature Requests
- Small amount of feedback

→ compared to number of users pretty good
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- Press Releases
- Code reviewable by everyone
- Extended Open eCard network on LinkedIn
- Invite possibly interested parties to join
- join.openecard.org
- https://github.com/ecsec/open-ecard
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Success story:
  – Incoming certification according to BSI TR-03124
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Conclusion

- **Success story:**
  - Incoming certification according to **BSI TR-03124**
  - Usable by German government agencies

- **Future tasks:**
  - Adapt Open eCard QMS to ISO 9001:2015
  - Packaging
Thank you very much for your attention!